REMARKS

Claims 1, 4, 10 and 16 have been amended herein, no claims have been added or canceled, and hence Claims 1-20 remain pending in this application.

The Applicants have carefully considered the Office Action of August 20, 2007, but respectfully traverse the rejections set forth therein. Reconsideration and withdrawal of these rejections in view of the following remarks are respectfully requested.

Explanation of the Amendments

Claims 1, 4, 10 and 16, as amended, now limit the multivalent cation in the first ink to calcium. This amendment better defines the invention and enables the claims to better conform to the working examples provided in the specification. Basis for the amendment is found in the specification on pages 6 and 7 under the heading "Multivalent Cation", and in the examples.

As the foregoing claim amendments add no "new matter" to the application and also place the application in better condition for allowance/appeal, Applicants request that such amendments be entered into the record for further examination.

Obviousness Rejections

In the aforesaid Office Action, all the claims were finally rejected under 35 U.S.C. §103(a) as allegedly being obvious and unpatentable over the disclosure of Katsuragi et al (EP1125994) in view of Yue et al. (US 6461418), or in view of this combination of references further in view of one or more of Ota et al (US 20020075369), Suzuki et al. (US 6153001), and Katsuragi et al. (EP 1191077). Applicants respectfully traverse this final rejection.

In Applicants' previous response filed 6/29/07, Applicants attempted to point out to the Examiner comparative data in the specification that associates the distinguishing feature of the invention over the cited prior art documents to a surprising or greater than expected result. It is Applicants' position that the Examiner has not properly considered the comparative data in the specification in reaching a conclusion with regard to obviousness of the claims and as such, Applicants respectfully request reconsideration herein.

As previously stated, the technical problem addressed in the application is to provide both high optical density (OD) and good rub-fastness in an ink set comprising at least one aqueous ink containing a self-dispersed pigment (SDP) colorant and an

aqueous fixer fluid comprising a soluble copper salt. As stated in the specification on page 2, between lines 12-14, one of ordinary skill in the art at the time of the invention would have generally expected the addition of polymer binder to improve rub-fastness but decrease OD, presumably because it helps shield the pigment from the OD enhancing effect of the fixer. The present inventors, however, have found that from among the infinite number of possible combinations, only a certain carbonic salt fixer/SDP ink combination with binder present does not experience this negative effect on OD.

Applicants submit the evidence relied upon herein, as well as in Applicant's previous response, should have been sufficient to rebut and overcome any alleged *prima facie* case of obviousness.

It is well established that evidence of unobvious or unexpected advantageous properties, such as superiority in a property the claimed compound shares with the prior art, can rebut *prima facie* obviousness and Examiner's must consider such evidence. [MPEP § 716.01(a) and § 716.02(a)]. Such evidence of unexpected results (compared to the prior art) was presented in the previous paper, but was, in the Applicants' view, dismissed by the Examiner improperly and without reason (i.e., no reasoned statement was provided for such dismissal).

The Examiner in the present case seems to have taken the position on page 5 of the Final Office Action that no amount of evidence relied upon would have been sufficient to prove a patentable invention, since the combination as claimed would have been expected by way of a "comparison study".

Specifically, in dismissing the evidence of unexpected superiority of the claimed invention, the Examiner stated in the current Office action on page 5, "it does not prove that the results could not have been expected from the prior art by way of a comparison study". Respectfully, this reasoning is improper.

According to the MPEP § 716.02(e), the Applicant is only required to compare the claimed invention with the closest prior art, and Applicant is not required to compare the claimed invention with subject matter that does not exist in the prior art. The Applicants cannot be required to compare the claimed invention to an ink set or printing method suggested by the combination of references relied upon in the obviousness rejection, which is what the Examiner seems to be suggesting. This is not a legally supportable basis for grounding an obviousness rejection. See *In re Chapman*, 357 F.2d 418, 148 USPQ 711 (CCPA 1966) (Requiring applicant to

compare claimed invention with polymer suggested by the combination of references relied upon in the rejection of the claimed invention under 35 U.S.C. 103 "would be requiring comparison of the results of the invention with the results of the invention." 357 F. 2d at 422, 148 USPQ at 714.). This is what Examiner is suggesting here which is entirely improper.

Weighing evidence of unexpected results begins with the determination of the closest prior art and what results are to be expected.

Even if one were to take the primary reference, Katsuragi et al (EP1126004), as the closest prior art, as suggested by the Examiner, at most, this reference can only be considered as teaching within its broad disclosure an ink set comprising a first ink, comprising a self-dispersing pigment (SDP), and a fixing fluid, comprising a polyvalent metal salt. The polyvalent metals for the fixing fluid specifically named therein are magnesium, calcium, barium, iron, copper and zinc. Of these, calcium and magnesium are listed as most preferred [0049] and are the only polyvalent metal fixers exemplified. As already acknowledged by the Examiner in the current Office Action as well as in the previous Office Action, Katsuragi et al do not teach soluble binder or multivalent cation, including calcium, in the first ink.

Thus, the only teaching or fair suggestion that can be attributed to the primary reference, Katsuragi et al. (EP94) is that one of ordinary skill in the art would expect all polyvalent metal fixers to perform substantially similar when no binder is present, with perhaps calcium and magnesium standing out as slightly better.

In fact, the results in Applicants' specification are consistent with this expectation of equivalence of polyvalent metal as fixers for an SDP ink when no soluble polymer binder or multivalent (calcium) cation is present. As detailed in Applicants' previous response, and incorporated here by reference, fixation of SDP ink (when no polymer or multivalent cation is present) with copper fixer gives substantially similar OD results compared to calcium and other multivalent metal fixers.

What was discovered by Applicants, contrary to expectation, is that the multivalent metals are not equivalent as fixers for an ink comprising SDP when that ink further comprises a soluble polymer binder or/and an effective amount of calcium cation. Fixers with copper gave surprising, unpredictable, and unexpectedly superior OD results compared to fixers with calcium and other metals when used with a first ink comprising SDP and a soluble polymer binder or/and an effective amount of

calcium cation. These unexpected results, which are demonstrated in Applicants' specification, were detailed in Applicants' previous response and are reiterated below in the hope that they will be given further and full consideration. It is stressed that the superior performance of the copper fixer is of significant magnitude, and practical importance as it results in a visually perceptible increase in OD and consequently better image quality.

In Example 1 of Applicants' specification (described on page 17, line 28 to page 19, line 7 of the specification), ink B (self-dispersing pigment with soluble polymer binder) paired with copper-containing fixer D1, gives significantly and surprisingly superior (higher) optical density (OD) than the same ink paired with other fixers including calcium-containing fixers A1 and B1. The presence of binder in the ink is advantageous for durability, but this benefit should preferably come without loss of OD.

In Example 3 of the specification (described on page 19, line 14 to page 20, line 8), ink B (self-dispersing pigment with soluble polymer binder) paired with the copper-containing fixer D1 achieved significantly and surprisingly superior optical density at a lower area fill of the fixing fluid than the same ink paired with other fixers including calcium-containing fixer #1. The ability to use lower area fill of fixing fluid is advantageous because it imposes less liquid load on the substrate. At fixer fills greater than 70%, paper curl was severe.

In Example 6 of the specification (described on page 23, line 1 to page 24, line 11), inks L2-L4 (self-dispersing pigment with multivalent metal salt) paired with the copper fixer D1 gave better optical density than similar ink (ink L1, no salt) paired with D1. Especially advantageous is the pairing of ink L2 (with added calcium salt) and copper fixer D1 which gave significantly and surprisingly superior optical density than the same ink fixed with calcium fixer A1. Similarly, an ink comprising self-dispersing pigment and both soluble binder and calcium salt (ink M) paired with copper fixer D1 gave significantly and surprisingly superior optical density than the same ink fixed with calcium fixer A1.

Since all of the claims require that the first ink to comprise soluble polymeric binder or/and multivalent, namely calcium cation, they are clearly commensurate in scope with the unexpected results shown in the specification.

In summary, although the Applicants maintain that the cited references do not set forth even a *prima facie* case for obviousness in the first place, as argued in

Applicant's previous response, it is, nevertheless, respectfully submitted that the evidence of unexpectedly superior results is compelling and sufficient to rebut any *prima facie* case of alleged obviousness. In the face of such evidence, all rejections made under 35 U.S.C. §103(a), should be withdrawn.

Conclusion

In view of the preceding remarks, Applicants believe that all outstanding rejections have been successfully overcome and that this case is otherwise in condition for allowance. If for some reason the application is not allowable, Applicants' attorney requests a telephonic interview with the Examiner to discuss the case and any additional amendments to the claims that may be required to place the case in allowable form.

Respectfully submitted,

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Dated: 4/18/08